Supplementary information

Nonvolatile resistive switching and synaptic characteristics in lead-free all inorganic perovskite based flexible memristive device for neuromorphic systems

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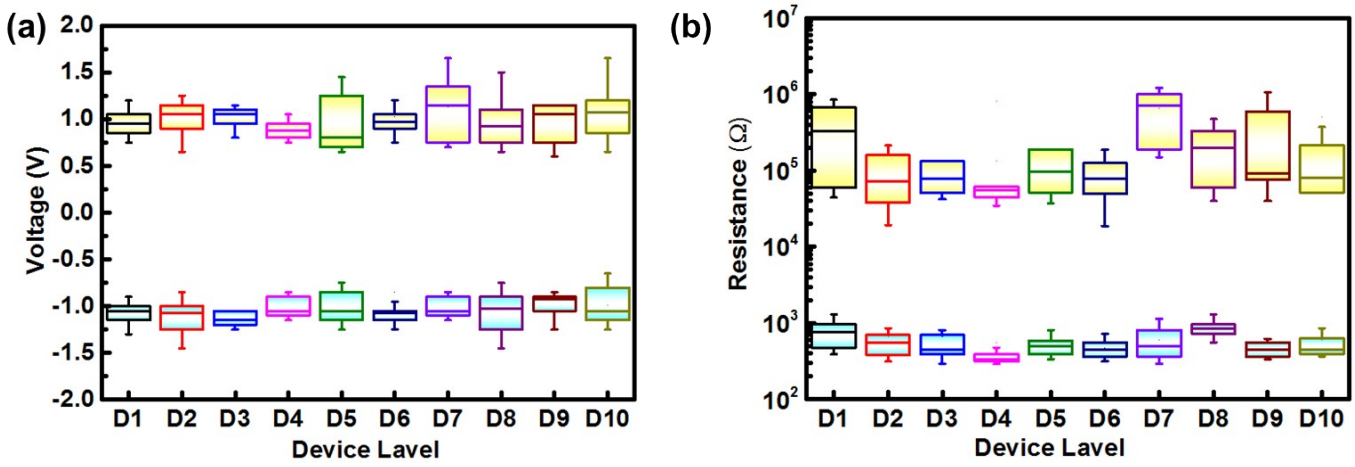

Fig. S1: Statistical distribution of (a) the switching voltage (b) LRS and HRS for various devices

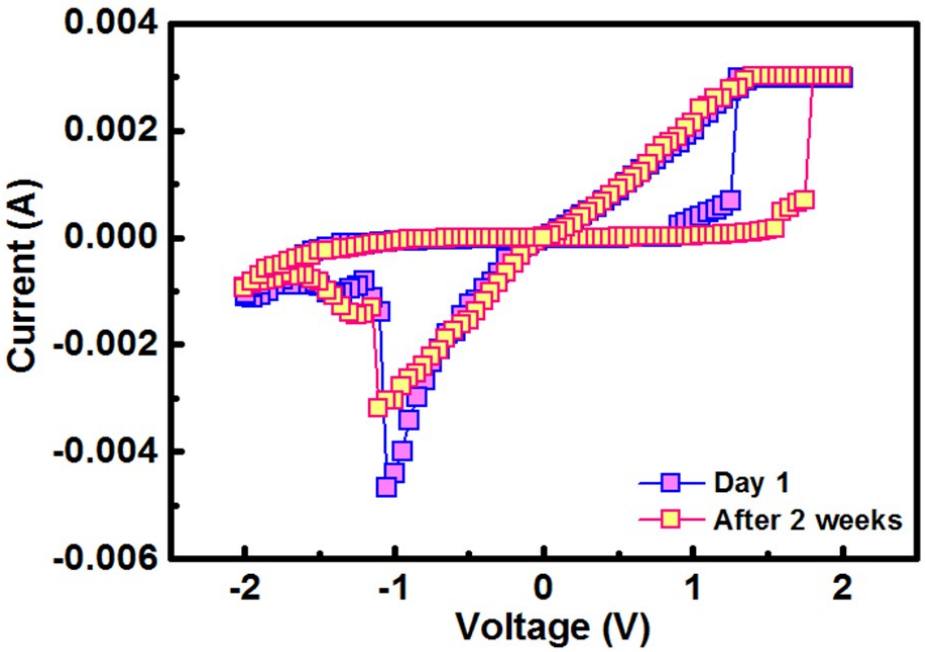

Fig. S2: I-V curve of the Ag/$CsSnCl_3$/ITO device on 1st day and after 2 weeks.

Structure	**Lead free**	**Forming voltage**	**Set Voltage (V)**	**Reset voltage (V)**	**ON/OFF ratio**	**Retention (s)**	**Endurance cycles**	**Bending cycle**	**References**
Al/$CsPbBr_3$/PEDOT:PSS/ITO/PET	No	3	-0.6	1.7	~10^2	--	50	100	1
Ni/ZnO/$CsPbBr_3$/FTO	No	No	-1.0	0.7	~10^5	>10000	100	--	2
Au/$CH_3NH_3PbI_3$/ITO/PET	No	No	0.7	-0.5	~10	10000	400	100	3
Ag/$FAPbI_3$/Pt	No		0.22	-0.22	~10^5	1000	1200	--	4
Au/$CH_3NH_3PbI_{3-x}Cl_x$/FTO	No	No	1	-1	<10	>10000	>100	No	5
Ag/PVOH-$ZnSnO_3$/Ag/PET	Yes	No	1.5	-1.5	~100	129600	500	1500	6
Au/PMMA/$CsSnI_3$/ITO	Yes	0.05	2	-3	>10	10000	>150	--	7
Ag/PMMA/$Cs_3Cu_2I_5$/ITO	Yes	0.48	0.6	-0.44	>10^2	10000	100	--	8
Pt/$CsSnBr_3$/Pt/PI	yes	--	0.20	-0.15	>10^5	10000	50	200	9
Ag/$CsSnCl_3$/ITO	Yes	No	0.95	-1.07	>10^2	10000	10^5	200	This work

Table S1: Tabulated electrical parameters of memristors

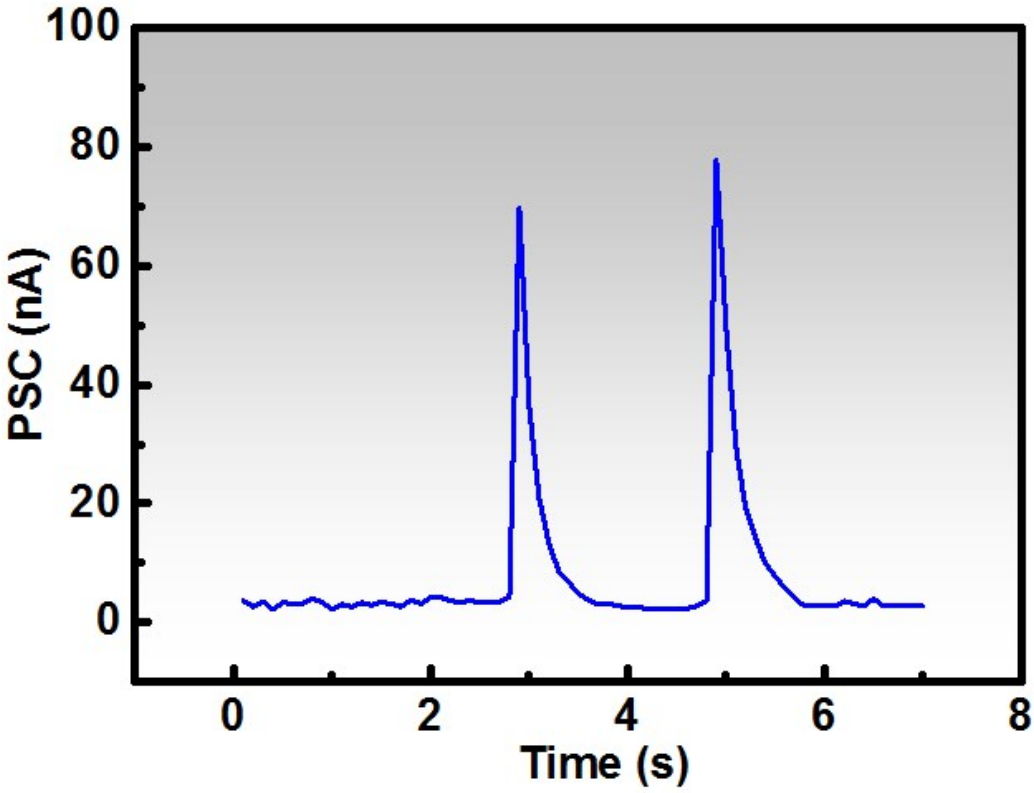

Fig. S3: PPF Characteristics with pulse amplitude 3V and pulse width 10 μs

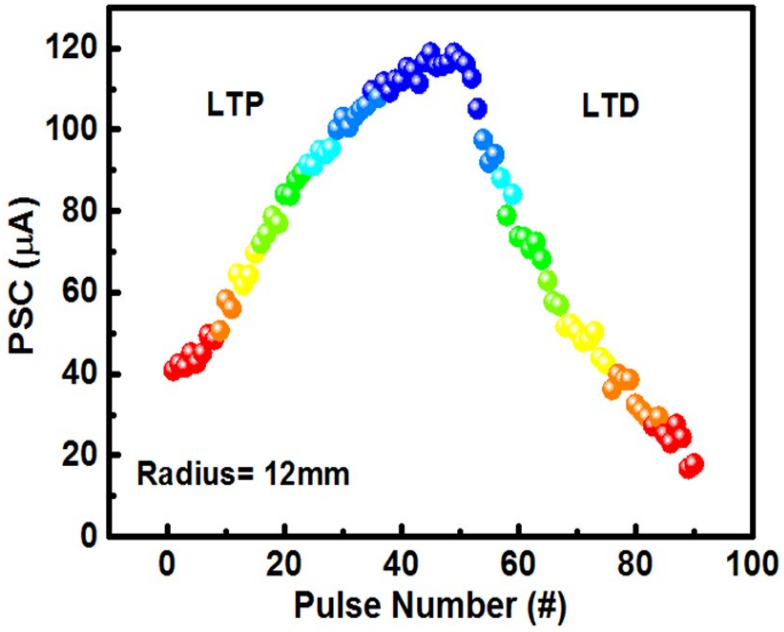

Fig. S4: Synaptic potentiation/depression of a typical memristor at the radius of 12mm.

References

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